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Land policy REVIEW

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS



Editorial Notes

CONTRIBUTORS: **LOWRY NELSON** is professor of sociology in the department of agriculture, University of Minnesota.

RAPHAEL ZON is director of the Lake States Forest Experiment Station, St. Paul, Minn. His article is based on an address delivered at the honors banquet at Michigan State College.

JOHN J. CORSON is director of the United States Employment Service and the Bureau of Employment Security of the Social Security Board, Federal Security Agency.

PETER L. SLAGSVOLD is an irrigation specialist in BAE. He is stationed in Denver and directs planning of irrigation proposals under the Case-Wheeler Act.

ERNEST J. HOLCOMB is an agricultural economist in the BAE division of program analysis and development.

ROY F. HENDRICKSON is administrator of the Agricultural Marketing Administration.

JOHN M. BREWSTER, until recently senior agricultural economist in the BAE division of program development and coordination, has joined Farm Security Administration. **JOHN C. ELLICKSON** is a member of the division of farm population and rural welfare, assigned to work in the field of labor, tenancy, and rehabilitation.

ROBERT C. COOK is secretary of the American Genetic Association, and editor of the *Journal of Heredity*.

CAROLINE B. SHERMAN, an agricultural economist in BAE, does frequent spare-time articles and reviews for national magazines.

CATHERINE C. CARMODY is editor of *Inside BAE*.

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THE *Vast Gulf* BETWEEN Democracy ^A_N_D Tyranny

By RAPHAEL ZON. *Here is a creed and a challenge for these times when the foundations of liberalism and democratic strivings are threatened: To see to it that the America we are fighting for remains what it has been for 150 years.*



EVEN a cursory review of the development of science all over the world brings out this significant fact: The periods during which science made distinct advances coincide mostly with the periods of liberalism and democratic strivings.

In ancient Greece, philosophy and sculpture reached their highest development in democratic Athens, not in the neighboring oligarchic Sparta. In the Middle Ages, the masses were kept in ignorance and oppression. Science made no progress. It was only with the coming of the liberal reforms and humanitarian ideas at the close of the fifteenth century that any advances were made in science; the printing press was invented, America was discovered, and the Reformation swept over Europe.

The great age of French science coincided with the liberal and democratic trends that spread toward the end of the eighteenth century. The French Revolution, by liberating the French people from the shackles of feudalism, gave a tremendous impetus to the advancement of science. From France, science spread to Germany.

The best example, however, of the close relation between the advancement of science and democracy is presented by Germany. The most brilliant period in the history of German science within recent times, according to J. D. Bernal, Professor of Physics, University of London, occurred soon after the close of the first World War when Germany for a short time became a republic, known as the Weimar Republic, and

experienced a wave of freedom which greatly stimulated scientific work. The revolution in physics that culminated in 1925 in the new quantum theory was an achievement due largely to German science. It is indeed the irony of history, and it is not a coincidence, that, with the collapse of the Weimar Republic and the advent of Hitler, the man whose work gave the impetus to this great achievement in physics was hounded out of Germany and deprived of his citizenship.

Here

Our own country, from its very beginning, offered a fertile field for the development of science because it was founded on democratic ideals that permitted freedom of the spirit. Today, in spite of our occasional grumblings for not getting larger appropriations, the fact is that expenditures for the promotion of science in the United States are truly colossal. The expenditure on academic, governmental, and industrial research is about \$300,000,000 a year—10 times what is being spent in Great Britain, and more than is being spent in the rest of the world, except possibly Russia.

This intimate relation between science and democracy is only natural. Science, to progress, cannot be hampered by prejudice, inhibitions, and oppression. The human spirit must dare to inquire into every phase of nature or human life, no matter how fixed by habit or tradition.

Such conditions do not exist in countries dominated by the Nazis. To maintain their power, the Nazis had to control the political and economic life and the thinking of the

people. The German state had to be conquered, and the German soul, too.

Since science in Germany before the coming of Hitler provided no scientific basis for the Nazi ideology, this science had to be manipulated. To justify the present Nazi regime, the two great human ideals, the brotherhood of man and the dignity and importance of the individual, had to be proved unsound, and replaced by the ideals of blood and soil, or race and war.

University heads and deans, who were men of high scientific standing, were replaced by Nazi functionaries brought up to despise intellectual activities. The effect was to destroy the spontaneous character of scientific work. Originality became dangerous. The scientists who refused to submit to the Nazi dictations were ousted. Some had to flee the country. Some were put in concentration camps. Many committed suicide.

The full effect probably will not become apparent until the next generation of scientists, but already the output and the quality of graduate work has greatly diminished.

Science for War

From the point of view of the Nazi philosophy of blood and soil, science is fundamentally unnecessary. The present-day warfare, however, requires highly specialized machinery and a high state of industrial development, and for these, science is necessary. The Nazis are faced with the paradox of having to maintain their strength by the use of methods that they despise. They have, therefore, adopted a deliberate policy of turning science into war

science, and encouraging only those researches that lead to military ends. It is only a question of time when the German technique, for years one of the highest in the world, must eventually suffer also a decline.

Compare the present trends of science in Nazi Germany with the prerequisites of true scientific work. One of the greatest physiologists of our time, who died only recently, in a last testament to his students, pointed out the qualities of mind that he considered essential for carrying on fruitful research work. He emphasized consistency, modesty, and passion.

The A B C's

First of all, consistency. From the very beginning of your work, train yourself to strict consistency in the acquirement of knowledge. Learn the A B C of science before you attempt to scale its peaks. Never embark on what comes after without having mastered what goes before. Never try to cover up the gaps in your knowledge, even by the boldest guesses and hypotheses. Such a bubble may delight your eye by its play of colors but it will inevitably burst and you will be left with nothing but confusion. Train yourself to reserve and patience. Learn to do the heavy work that science involves. Study, compare, accumulate facts. Without facts, your theories and labor are in vain. But in studying, experimenting, and observing do not remain on the surface of the facts. Do not turn yourself into a museum custodian of the facts. Try to penetrate into the secret of their origin. Steadfastly seek the laws that govern them.

The second thing, he said, is modesty. Never think that you already know everything. And however high the esteem in which you are held, always have the courage to say to yourself, "I am ignorant." Do not allow pride to take possession of you. It will cause you to be obstinate when you should be conciliatory. It will cause you to reject useful advice and friendly help. It will prevent you from taking an objective view.

The third is passion. Remember that science demands a man's whole life, and even if you had two lives it would not be enough. Science demands from man great intensity and deep passion.

These are the words of a really great scientist and teacher, and the qualities of mind upon which he lays so much stress can be fostered only in a democracy. Our country has always been generous and lavish in expenditures for education and scientific research, and our people have been making the most of this great opportunity. Of the 6,000,000 young men and women between 19 and 21 years, 15 percent—the highest percentage in the world—are in universities. And one of the lowest today is Nazi Germany—with a little over 2 percent.

Much is Asked

If much is given to the scientific worker, much is also asked of him. It is a matter of honor for the young as well as the old scientist to justify the great trust that our country puts in science. At this time, especially, science can and must render its greatest service to the people.

Secretary Wickard has said that food will win the war for democracy

and write the peace. There is no need here to elaborate on the contribution that agricultural science has made and is making. It is through scientific research in agriculture that we can now produce food in abundance for ourselves and the Allies.

Our knowledge of nutrition is proving of great service in developing proper diets for our armed forces and the civilian population. By combating pests of all kinds, by selecting and breeding of new varieties of corn, wheat, and other plants, by improving pastures, and by the use of proper fertilizers our ability to increase yields has been greatly augmented.

Because of the available knowledge of improved methods of hygiene, sanitation, and feeding of livestock, milk producers can greatly boost their output. The agricultural scientists are eager and ready to come to the aid of the farmers in this time of trial with the weapons which they had forged in time of peace.

Science will enable us to win the war. Not the science that is locked up in the heads of a few specialists, but science widely distributed among the large masses of people and applied to the affairs of everyday life.

Not in the field of agriculture alone, however, but also in all other fields, whether in the production of tanks, airplanes, finding substitutes for shortages in essential raw materials, in the treatment of the wounded, science is strengthening our striking power.

Faith

I need not dwell any longer on the contribution that science is making to technical progress and human

welfare. But I should like to mention the responsibilities of the scientist as a citizen of a democracy. It is not enough to be only a scientist. All the science in the world will not avail this country if our democracy is destroyed. The lesson of history is clear. The fate of the scientist and democracy are indivisible.

More Democracy

Our democracy is in danger. The outcome of the struggle may depend as much on weapons, tanks, and planes as upon the strength of our faith in democracy. The present war is a struggle of faiths. Those are stronger in arms who are stronger in heart.

The issue is whether those who believe in democracy can bring against the faith of the enemy a stronger, more resisting, more enduring faith of their own. For more than 150 years democracy has been the all-absorbing faith that guided our destiny. If we are to come out victorious in this struggle, this faith must be stronger than any other faith in the world.

We can frankly admit that our democracy is not perfect. We need not shut our eyes to the fact that in the last 50 years there have crept into it some inequalities. The vanishing of the frontier and free lands, the exploitation of both natural and human resources by small and selfish groups, the growth of large monopolies, the growth of cities and their slums, the increase in youth delinquency, the increase in the number of tenant farmers, despairing migratory laborers, and the unemployed, are all danger signals to our democracy. We must clearly

Right

Complete liberty of contradicting and disproving our opinion is the very condition which justifies us in assuming its truth for purposes of action; and on no other terms can a being with human faculties have any rational assurance of being right.

—JOHN STUART MILL

recognize them as such. But under our democratic institutions, where the will of the people has its full sway, we also can correct them.

The cure to the ills of democracy—as James Truslow Adams remarked—is not less but more democracy. Our democracy must be revitalized—become a militant, living force. We must not merely talk democracy, but breathe, live, and act democracy. As long as the American people are kept free, as long as all the children of the land have equal opportunity, we need not fear for the future of our country. The greatest danger for any country is when despair for the future takes hold of the people—when they become obsessed with a sense of futility.

It was despair that drove the German people into Hitler's arms. It was despair that undermined the strength of France. There can be no ground for such a feeling in our

country as long as democracy is on the job. It is up to you, it is your fight, to cleanse our democracy of its impurities and make it stronger and truer in the service of the great masses of American people.

At times I am somewhat disturbed when I encounter complacency or lack of understanding of what democracy really means to us. I was born and spent part of my student life in a country as ruthless and cruel as any totalitarian country today. Its saving grace was that it was stupid, corrupt, and inefficient, and therefore less refined and thorough in its cruelty. I refer to the Czarist government of Russia. I have enjoyed now for more than 40 years the blessings and advantages of American democracy. I know, therefore, from personal experience what this difference means, the vast gulf that separates democracy from tyranny. It is the difference between life and slow death.

Morale

I have been deeply impressed by several articles by Ralph Ingersoll, who tried to explain the miracle of the valiant resistance of the Chinese and Russians to the aggressors. In seeking for the reasons, he came to the conclusion that it was the morale of the people, and morale alone, that accounted for it.

In Russia, he said, it is not the present Soviet social system whose weaknesses he thinks will show up within a generation, but the faith of a young and virile country in itself. Young men and women run Russia. Still desperately poor by our American standards, they have risen by their own efforts from ignorance and hopelessness born of op-

pression to create a country in which illiteracy has been almost completely abolished. When Germany invaded Russia, a united people arose to a man, woman, and child, and almost by sheer determination first halted and then beat back a mighty professional army. They clearly understood from the very beginning that this war is a total war to survival or total destruction. Chinese resistance is made of the same stuff.

All—for Victory

If the Chinese and Russians show so much determination and readiness to die for the mere vision of a better life, which they have hardly yet tasted, how much more important it is for us to fight for the good things of life which we have enjoyed for such a long time. I know it is difficult for a well-fed

person to understand how a hungry person feels. It is difficult for many of us who always have lived under the protective wings of democracy to realize what this loss would mean. Yet realize we must. We too must come to realize that if we want to preserve our democracy we must accept this war as a total war, that every ounce of our energy, that every pound of raw material, that every hour of our life, should be given unhesitatingly and unsparingly toward final victory.

While we fight and arm, we must at the same time, and as a part of this same fight for democracy, see to it that the America we are fighting for remains what it has been for 150 years—the land of opportunity, the Country with a glorious future for the young generations, the State with a government of the people, by the people, and for the people.

FACTS FROM THE 1940 CENSUS

Although diminished in number, the country general store carries on in this age of fast travel and specialization. Approximately 40,000 remain, compared to 104,000 10 years ago.

In cities of 2,500 and more there are 98.1 males to each 100 females, while in rural-farm areas there are 112.1 males to 100 females. In villages of 2,500 and less there are 104.2 males to 100 females.

American cheese plants reported an annual production of nearly 9,000,000 pounds of limburger cheese, equal to one pound to each fourth family per year.

The factory value of baskets made for the fruit and vegetable industry is more than \$14,000,000 annually.

WHEN YOU BUY \$3,000,000 WORTH OF *Food* A DAY

By ROY F. HENDRICKSON. *Procuring and delivering the food that will win the war require the cooperation of many persons—farmers, railroadmen, processors, stevedores, cannerymen, researchers, nutritionists, sailors.*



THE PAUL REVERES in several cities in these days of war do not ride horses. But they get around just the same; the Agricultural Marketing Administration on the job of purchasing and delivering to dockside \$800,000,000 worth of lend-lease food in the past 12 months often has occasion to employ these emergency messengers.

They are a small part of a mighty cooperative purchasing effort that has brought together many groups from farms, many branches of the Department of Agriculture, the food processing industries, factories, warehouses, and the docks. All contribute their part in procuring for the United Nations approximately \$3,000,000 a day worth of direly needed foodstuffs, adapted to war-time use.

Consider a typical instance in which everyone from farmers to the horseless Paul Revers took part. This one happened before Pearl Harbor. At the time, bombs were blasting London and the English countryside. Babies and children in dank bomb shelters were whining and crying softly, not so much from fear, as from the ache of hunger.

Silently through the dark waters of the North Atlantic off our coast British warships were converging to meet a fleet of cargo ships loaded to the gunwales with food and materials of war. Enemy submarines prowled beneath the waves. The men-of-war were due to pick up the merchant ships for convoying on a Monday night. One by one the cargo ships slipped out of our eastern ports for the rendezvous.

But it looked bad for two ships—stout ships that were scheduled to carry a load of war materials. The materials were delayed. The ships needed 18,000 tons to fill space. On Saturday noon this word was sent out to the field offices of the AMA. Offices and factories were closing for the week end. But the tickers in the AMA New York offices, where all purchases are reported, were tapping out a steady stream of words and figures that told where carloads of foodstuffs were being sealed and starting to roll in every part of the United States. It told where all these thousands of cars were and the warehouse destination of each.

It was no trick with these facilities to locate the needed food already in transit; new orders were issued to

route it posthaste to the port. The railways made up special trains.

By Sunday morning the cars were at the docks. The Paul Reveres, up early, had ridden forth to call out sleeping stevedores and take them to the boats. By nightfall the ships, all filled with food, sailed to join the convoy.

I tell this only as one of the many incidents that reveal the rapid working of food procurement under lend-lease and point out the many cooperative agencies of government, business, railways, and workers that together are feeding peoples at war.

More Than a Year

This welding of groups for food production and distribution began more than a year before Pearl Harbor with Secretary Wickard's call for more production of a number of farm commodities. Because this was done before December 7, the farmers were ahead of war demands, rather than behind them as they were in 1917. The move created a supply of food for the United Nations and stabilized the farmer's market. It placed money in his hands that could be used to carry out plans for further increased war production.

Because there was food on hand and the purchasing structure of AMA was already in high gear, it was possible, during the year that ended March 15, for AMA to purchase more than \$800,000,000 worth of farm commodities. This amount, 7,500,000,000 pounds, was bought primarily for shipment to the United Nations under the Lend-Lease Act. It included also Stamp Plan, School Lunch, and Penny Milk purchases, and supplies for the Red Cross and Hawaii and other Territorial programs.

The United States agreed to supply 25 percent of the protein requirements of Great Britain; therefore, meat and dairy and poultry products represented more than half of the purchases made during the year. More than 1,116,000,000 pounds of meat products with an f. o. b. cost of approximately \$237,500,000 were purchased. Dairy and egg products amounted to more than 1,700,000,000 pounds, for which more than \$282,643,000 was spent. More than a billion pounds of fruit, dried, fresh, and canned, were purchased at a cost of more than \$44,000,000. Vegetable purchases, with dried beans leading the list, came to more than 829,000,000 pounds at a cost of \$26,000,000.

These purchases represent many examples of cooperation among food processors, Department of Agriculture nutrition specialists, railway and shipping groups that worked with Government purchasing agencies in effecting timesaving order, the Army, and scores of others.

Containers

An example, that resulted in a shift from peace to war requirements in which many participated, was solving the container problem. In normal times, commonly used export containers were satisfactory. But not for war. There were new types of food to be shipped and packaging had to be sturdy enough for rough ocean voyages, serviceable in the jammed holds of ships where space means lives. Because warehouses in Britain are favorite targets of enemy bombers, containers had to be waterproof to lessen the damage when goods were sprayed with water during incendiary attacks.

Barriers

Today's barriers to speeding and synchronizing the functions of production, marketing, processing, and transporting commodities essential to the war program must be wiped out one by one.

—ROY F. HENDRICKSON.

To meet these requirements, AMA brought together carton manufacturers, British technicians, and all others concerned and got their best ideas for materials, construction, and fastenings. The ideas were tested in the laboratories of the Forest Service in Wisconsin. A standardized type of carton was perfected; today it is being manufactured with a minimum of variation in size and materials—and it is taking the wartime raps.

Warehouse facilities for almost a billion dollars' worth of lend-lease food were worked out with fine cooperation from warehousemen and with the military and naval forces. Here again wartime demands for strategic location came first in choosing warehouses. Should food be concentrated in a few seaboard cities, the risks of bombing, saboteurs, fire, and congestion would become more acute. Great amounts could be lost at a single time, and goods concentrated in one port are often needed for ships docked at another.

To overcome these difficulties, the 308 warehouses, with a total capacity of 20,000 carloads, now used by AMA, are strategically located.

From these warehouses goods can be sent out to ships along the whole seacoast. Since they are all located within 24 to 48 hours from ports, loadings can be made on short notice. Often in a single night as high as 1,200 carloads of foodstuffs have moved from warehouse to wharf.

Dehydrated Foods

Another instance of working together is the work in dehydrated foods.

During the first World War, little was done with dehydration. Today, with battle fronts around the world and shipping space at a premium, the importance of dehydrated foods has increased greatly—one ship can carry the amount of food values that would require nine ships were the commodities in their natural form. Tin and rubber shortages further accentuate its wartime value.

Dehydrated food, too, plays a great part in building up a bank of protein foods and vitamins for civilian and military establishments, our own people, and our Allies. To have this food bank, we must have a product that can be stored without deterioration, will be adapted to shipping, and will preserve as much as possible the nutritional qualities of fresh food.

We have many processed foods that meet this requirement. Many more are being perfected by the Department of Agriculture and processors.

Dehydration of cheese is being perfected. It will come in a flour-like powdered form. With the addition of water, it can be made into a cake similar to processed cheese.

A number of packers are trying dehydration of meat. The process is one by which 100 pounds of boneless beef can be reduced to 30 or 40 pounds containing not more than 5 percent of moisture. When twice its weight in water is added, it makes a good meat pie, a hamburger, or a croquette.

The Army, after many tests, has decided to give more emphasis to dehydrated foods. Emphasis is on using only first-class products in dehydration, and they are carefully prepared by peeling, washing, and so on. The process itself is done with the greatest care. The maximum amount of water is taken out without burning or scorching the material.

Dehydrated facilities to provide the war requirements have been stepped up manifold during the past 12 months. A year ago our egg drying capacity was 40,000,000 to 50,000,000 pounds. Today it is 250,000,000 pounds. Four months ago the capacity for producing dry milk was 400,000,000 pounds. Today it is 487,000,000 pounds, with a much higher goal for 1942. The demand for dehydrated products continues to be beyond plant capacity, but steps are being taken to expand this capacity within the limits of war requirements for metals.

Another wartime food requirement, unknown on any large scale in the previous war, is concentrated vitamins. A member of the British Food Ministry described concentrated orange juice as a "Godsend to us." One part of the orange concentrate equals nine parts of orange juice. Today all British children 2 years of age or under are given a daily quota of it.

Vitamins

On a larger rate of increase, however, has been the expansion of vitamin A production from fish liver oils in concentrated form. The natural oil from the liver of the soupfin shark, which only a few years ago was found to contain the highest vitamin potency, is one of the chief sources of wartime vitamins.

It contains from 50,000 to 150,000 U. S. P. units of vitamin A per gram; the oil from other fish ranges from 3,000 to 50,000 units per gram. The potency of these oils can be artificially increased to as high as 1,000,000 vitamin A units per gram through concentration processes, so that soupfin shark oil takes a tenth as much shipping space as oil with lesser potency.

High-potency oil makes up the bulk of the AMA's vitamin purchases for the United Nations. The latest purchase amounted to about 300 drums, with a capacity of 55 gallons each, and provided enough vitamin A to take care of one day's requirements of 155,286,000 persons.

*Shall I not have intelligence with the earth? Am I not partly
leaves and vegetable mould myself?*

—HENRY THOREAU.

BRINGING THE *Workers* AND THE *Jobs* TOGETHER

By JOHN J. CORSON. *The U. S. Employment Service is much more than an employment agency, and its functions are becoming more and more important. It now faces a tremendous job, confident that it will be well done.*



AGRICULTURE has suffered a double drain on its manpower. Its ranks have been thinned out by enlistments, the draft, and the transfer of workers into war production. But there remains the need of producing and processing greater amounts of food.

The problem seems serious, but we of the U. S. Employment Service are confident that it is not insurmountable. Primarily, it means a more efficient and more strategic use of the available labor supply. Secondly, it means the expansion of labor ranks through the introduction of youth and women, who for short periods, at least, can be called into the emergency. To a great degree, it will be the task of the U. S. Employment Service to recruit and place the army of men, youth, and women needed on the various food production fronts.

In the past, the Service did an appreciable amount of farm placement, but its major activities were the recruitment and placement of industrial labor. Through the 1,500 full-time and 3,000 part-time public

employment offices, it was a national clearing house where men in need of workers and workers in need of jobs were brought together. Out of this relationship with employers and labor, lasting over a period of years, the Service has built up a pattern of flexible procedures and a framework of policies. Wherever applicable, these will be utilized now in the promotion of the farm placement program and in dealing with farmers and farm workers.

America's women and youth will undoubtedly play an important role in harvesting and processing food this year. They will work on cotton plantations, on truck and fruit farms; they will find jobs in canneries. Most States have laws governing the employment of women and children. Where such a law exists, it is our policy to refuse any request for such workers where conditions of labor run counter to existing legislation. If there is a legal minimum wage which applies to women or minors, that is the wage at which they will be recruited. The same holds true for hours and other conditions of labor specifically set down in the law.

Similarly, the Service is governed by existing regulations in recruiting labor from the WPA and the CCC, both of which grant furloughs so their men may get into agricultural employment and will reinstate them following the termination of their jobs. According to regulations, however, the U. S. Employment Service may not offer jobs to these men where working conditions, wages, and hours are below the standard enjoyed by other farm labor in the community.

Common Sense

Essential common sense is behind this ruling. The sooner these men are absorbed into the general working body, the better for them as individuals, the better for the Nation. The addition of these workers (many of whom have received training in skills which can be used to excellent purpose in farm work) to the existing labor supply will be of tremendous value to farm employers. To recruit them at sub-standard wages would not only defeat the purpose of introducing them into private employment but would create justifiable unrest and dissension among other farm workers. Government cannot use them as a wage-cutting instrument in competition with other workers.

While this policy of maintenance of wage standards on the surface may seem to have been made exclusively for the protection of the worker, it proves, upon intelligent examination, a policy that also concerns the welfare of the employer.

The public employment offices were created to serve employers and workers alike. Obviously we can-

not serve one without the other. To fill job orders of employers we must have a roster of workers who are available for employment. Just as quickly as we undermine or destroy the respect and the confidence of labor in our dealings with them, just so soon does our value to the employer as a job placement agency cease to exist. The U. S. Employment Service does not dictate how long a person shall work on a job, whether it be from sunup to sundown as is the practice in some forms of farm work or the specified shorter day that applies particularly to certain groups. Local standards and State laws set the pattern, and we conform to it.

These Later Days

Where housing is a factor—and this is especially true for migrant workers—employers are required to describe the kind of shelter they offer. As a rule, a representative of the Employment Service gets details about housing facilities before workers are referred to a job. It is not that we feel it is our function to set housing standards, but it is our obligation properly to describe job conditions to the worker. Today, more than ever, workers are in a position to make proper housing a condition of employment.

Increasingly, as the demand for the movement of workers grows heavier, transportation will be a serious problem this year, complicated in no small measure by the shortage of tires. While the Service at this time can present no comprehensive transportation plan or program, we are in a position to indicate some things that might be done.

Last year, for example, a growers' association in one State paid the gasoline bills of migrant workers referred to them by public employment offices in an adjoining State. Designated filling stations along highways were instructed to service the cars of all workers carrying job referral cards. This solution to the transportation problem was worked out between the growers who needed help and farm placement representatives in the States concerned.

This method was feasible in 1941 when the purchase of tires constituted no problem other than that of cash, but it may not work in 1942. It is possible that employers will have to take the initiative in inaugurating local or sectional transportation plans. Chartering school buses not in use during the summer months, hiring trucks, getting reduced fares on bus lines and trains are some of the things that might be done. The problem is not a new one; we had to solve it and did during the last war. But it is important speedily to work out plans that will enable public employment offices to give each worker referred to a job the assurance that he can get to it. Already, in cases where distances are involved, we have been obliged to ask employers in need of workers whether they can furnish the means of bringing them to the job.

Bad Business

Because of the labor shortage, public employment offices are particularly careful this year in checking the number of workers ordered for a particular job. We have always done this, but even greater care is necessary now. Before a given number of workers is referred to a job, the

farm placement representative makes a survey of the farmer's needs on the basis of crop acreage and duration of season. There have been occasions in the past where employers, fearful of not getting the full number of workers required for their farms, have asked for more than they needed. This is bad business even under normal conditions; today it can be a dangerous hindrance to the food program.

There are broader aspects to the present employment situation that should be clarified.

One question frequently considered is: Can anything be done to increase the available supply of skilled workers in farm industries? The answer we make to farmers and food processors is the same we have made to employers in war production industries. For some jobs there are schools which, within a short time, can train men in specific skills; for others, employers will have to carry the burden of training men on the job.

Training

Specifically, men have been and can be trained in the use and repair of farm machinery at vocational schools, which are located in farm areas; men cannot be trained quickly to hold key positions in dairies, canneries, and similar establishments where a variety of skills and a background of experience are required. For jobs in the latter category, employers in farm industries will have to do what employers in war industries have done—that is, cut down the number of key positions by breaking down the work in such a way that men of lesser skills can handle the work under supervision and direction.

Once the job is broken down, workers with special aptitudes can be promoted gradually to take on increasing responsibilities. This breaking-down and building-up process has proved highly successful in increasing war production; it can be equally successful in farming and food processing. The Service, through its staff of job engineers, has helped employers map out such training programs in industry; it stands ready to serve farm employers in the same way.

Immigration?

As one way to increase the numbers of general farm workers, it has been suggested in some quarters that the immigration bars be let down, that labor be brought in from Mexico, Canada, and some of the nearby Atlantic islands. The policy of the Service is to discourage such action until it has been definitely established that there is no available labor within our own borders to meet our needs. Too often, it has been discovered, the demands for alien labor blanket a reluctance on the part of employers to pay current wage rates.

Last year, for example, an association of southern agriculturalists, pleading labor shortage, appealed to the immigration authorities to permit the entrance of Mexicans to harvest their crops. The response of the immigration officials was to request the Service to make a survey of the labor situation in that particular section to discover whether a shortage existed. The findings showed that the difficulty lay not in a local shortage of workers but in the refusal of the growers to pay standard wage rates.

It is significant that the Mexican authorities were as loath to release their citizens to meet an artificial emergency at substandard wages as was the Service to encourage such an expedient. On the basis of our report, the request of the growers was denied and the crop was harvested at going wage rates.

There is no formal agreement between the immigration authorities and the Service, but the practice of making a survey before the admission of alien labor is permitted has been followed for several years. If and when our surveys indicate that a real labor shortage exists, that wage rates have nothing to do with the failure of farmers to get help, we shall be glad to recommend that immigration authorities give the "go" signal.

Ways and Means

Besides taking a stand on the introduction of foreign labor, the Service also takes a stand in the recruitment of labor for jobs in places where workers and employers are in a state of active dissension. The Service is not a strike-breaking agency, and will not refer men or women to jobs where they will be in fighting competition with other workers.

Apart from the few necessary limitations dictated by specific legislation or sound practice, the U. S. Employment Service is flexible in its administrative structure. Each public employment office is specifically geared to handle the particular problems of the community it serves, and is in a position to call upon the cooperating services of the hundreds of other public employment offices. A shortage of labor in one place thus can be remedied by recruiting workers in another where a surplus exists.

Manpower and the American Farm Plant

By JOHN C. ELLICKSON and JOHN M. BREWSTER. *This is a companion piece to one about "Wasted Manpower in Agriculture" in the April LAND POLICY REVIEW. The important point is that we now have a chance to train up our agriculture in the way it should go.*



NOW is the time to look over our farm plant and assess its future. Wartime agriculture must produce more with fewer men. New demands and restrictions are causing great changes of far-reaching import—changes that should be recognized and turned into permanently good channels. Most important is that many men are leaving farming for industry, but at the same time we have been wasting the power of 2,000,000 men on some 2,700,000 farms that are too small for effective employment and decent livelihood.

The demand for labor to meet war needs will make possible a program for reorganizing our farm plant into a system of efficient family farms; the waste of labor in agriculture does not arise from any inefficiency of family farms as such but from the fact that many farms are not large enough fully to employ and support a family.

A system of efficient family farms is the imperative demand of our war effort, and is necessary for the per-

manent well-being of agriculture. With many others we believe that superior values inhere in farm life, but we believe, too, that the foundation of good farm life is a farm with enough land and equipment for full and productive employment.

Current trends and increased employment are haphazardly reducing the number of farms and the extent of wasted manpower. The complete elimination of such waste cannot be accomplished in a few years, even under the pressure of war needs. But much more could be done to facilitate and direct adjustments toward an agriculture better able to meet the needs of both war and peace.

Any analysis of wasted manpower in our farm plant must start with a determination of the number and kinds of actual farms; this, in turn, depends upon the definition of a farm.

The census regards a farm as essentially a tract of 3 acres or more on which there were agricultural operations in 1939 or contemplated in 1940. But in the everyday mean-

ing of the word, a farm requires an able operator who has access to enough land, equipment, and motive power to provide employment for at least the major part of 1 man-year.

When these factors are properly combined, we assume that the total value of the farm output will be at least \$400 at 1939 prices. Accordingly, whatever their limitations, the total value of products per farm as reported by the census for 1939 becomes a test of the extent to which labor, land, and equipment are effectively combined to constitute farms. Under these terms there appear to be no more than 4,000,000 qualified farms.

In the first place, each of 1,966,000 census tracts had a total production of less than \$400, averaging only \$215, not enough to support a family and maintain a farm; \$550 (cash and noncash) is estimated to be necessary to provide the average farm family with an emergency minimum of food, clothing, shelter, and medical care.

Second, about 1,000,000 census "farm operators" depended to only a minor degree upon their farms for employment and averaged more than 200 days off-farm work in 1939. Using age as an index of ability to do a day's work, nearly 1,000,000 more census tracts are disqualified because the operators are too old or otherwise incapacitated to work well. Further, a comparable number lacked essential equipment; 1,081,000 tracts did not report any implements of value and 1,734,000 did not report a single horse or mule.

Finally, 2,000,000 census tracts were less than 43 acres in size—an average of 20 acres, with 11 acres of harvested cropland. (Although

some of these had sufficient land, it is assumed that they were offset by larger but less productive tracts.) They comprised one-third of all census farms but included less than 4 percent of all farm land, only 7 percent of all cropland harvested, and only 10 percent of the value of all machinery and equipment.

On the basis of this evidence, it appears that at least 2,000,000 of the census total of 6,100,000 tracts are not farms as customarily understood.

Any consideration of the national farm plant as a system of productive farms and farmers may disregard these tracts, since they can never be more than a negligible factor in agricultural production because of their occupants' lack of ability, time, equipment, or land to increase materially their inconsequential share of the total farm production—only 54 percent in 1939. Farm programs that presuppose a farmer on a farm cannot correct this situation. Production on these little tracts should be encouraged, but the families residing on them now live mainly from nonfarm sources of income, and the most feasible basis for improving their living is to increase their nonfarm earnings.

Kinds of Farms

In terms of their ability to support a family and provide effective employment, the 4,000,000 qualified farms can be described as large-scale, adequate, marginal, and inadequate. Such a description may be expressed in terms of the total value of farm products in 1939, since in that year prices were above the 10-year average and production was about normal in all major areas of the United States.

Farms with a total value of product of more than \$10,000, averaging \$22,989, are classified here as large-scale; those from \$1,500 to \$9,999, averaging \$3,006, as adequate; those from \$1,000 to \$1,499, averaging \$1,222, as marginal; and those from \$400 to \$999 as inadequate.

There are nearly 60,000 large-scale farms. Their annual labor requirement is greater than the annual labor supply of a usual family, and they have enough land and equipment so that manpower can hardly be said to be wasted. Farms ranging from \$1,500 to \$9,999, with an average output of \$3,000, generally are efficient family farms. Some may be a little small; some a little large. But in most cases we believe that the annual labor requirement of these farms equals the annual labor supply of a normal family. (This definition of family farms takes due account of the traditional practice of hiring seasonal labor owing to the nature of farm operations.) On these farms there is sufficient land and equipment for the effective use of family labor. Labor is not wasted. The result is a decent living.

These 1,310,000 farms produced more than half of the total value of product in 1939.

Approximately 700,000 farms with an output of \$1,000 to \$1,499, and averaging \$1,222 (of which about \$700 was available for family living), are classified as marginal because, by some standards, such an income can provide only a marginal existence.

Approximately 2,000,000 farms are classified as inadequate because their total value of product ranged from \$400 to \$999, and averaged only \$647, while it has been esti-

mated that some \$700 (cash and noncash) is the lowest amount necessary to provide a family with a minimum adequate living, which is somewhat more than the emergency allowance mentioned previously. The average operator of such a farm suffers annual deficits in net worth, and it is obvious that these farms can be sustained only by a continued impoverishment of the operating families, by depletion of the farm plant, or by an endless subsidy.

Wasted Labor

A shocking waste of manpower in our farm plant occurs on these inadequate and marginal farms. Were our farm plant reorganized so as to permit the general application of the technology now prevailing on the adequate farms, the 2,700,000 inadequate and marginal farms would be replaced by 700,000 farms; giving a total farm plant of 2,000,000 family farms plus the present 60,000 large-scale farms.

A conversion of our farm plant into a thorough-going system of efficient family farms could not be accomplished quickly, even for the sake of war production. For various reasons, it may not be feasible for even the better operators of inadequate farms to become immediately operators of adequate units (averaging \$3,000 output at 1939 prices). It does appear reasonable, however, that a selected half of the present 2,000,000 operators of inadequate units could double their present average production of \$647 if more land, equipment, operating capital, and some managerial assistance were made available to them. Any able-bodied operator who cannot do at least this well can probably

make better use of his talents in other occupations.

Reorganizing our farm plant so as to replace the present 2,000,000 inadequate units with 1,000,000 marginal farms would release 1,000,000 men for opportunities elsewhere.

Further, it appears reasonable to assume that at least 300,000 operators of the present 700,000 marginal farms are capable of handling adequate units. Reorganizing our farm plant to do this would save the labor of an additional 500,000 men.

Over a longer period of 25 to 40 years the rising generation of farmers, being better nourished, housed, clothed, educated, and used to modern farm technology, will be more competent and justify the reconstitution of all marginal farms into adequate units. This long-run adjustment would release still another 500,000 men for employment elsewhere. Of course this long-time, but smaller, adjustment is not justifiable as a means to a more effective prosecution of the war. But there is no doubting its consistency with an economy of full employment and "freedom from want" which is one of our major war objectives.

Objectives

To eliminate this wasted manpower several programs are suggested.

First, in all areas where there exists in any pronounced degree inferior technology, inadequate farms, and low living levels, there should be established a comprehensive system for recruiting, training, and placing the presently wasted manpower in other employment.

Second, within the next 5 to 10 years, through supervised loans and long-time leases, make available to the remaining operators of the present 2,000,000 inadequate tracts, the land, equipment, and training necessary approximately to double their present average output.

Similarly, reconstitute the present 700,000 marginal tracts into roughly 300,000 more adequate farms capable of an average gross output of \$3,000, at 1939 prices. Much of the necessary land would become available through the reduction in the number of farms. The submarginal land now included in these inadequate and marginal farms should be retired from agriculture and new land brought into cultivation to provide adequate units for the reduced number of operators.

Third, within 25 to 40 years reconstitute all marginal farms into adequate family units.

Several broad considerations underlie these proposals. They will provide a rational direction for existing trends. Even during the depression decade there was a pronounced degree of farm consolidation; between 1930 and 1940 the number of qualified farms apparently decreased by about 700,000, and this trend in farm consolidation is greatly accelerated by the war.

Without guidance, two results may occur: Too frequently small units will be added to farms already large enough for full family employment, thereby creating a demand for hired labor that could otherwise be avoided, and, more important, the new demand for manpower will largely bypass those overcrowded areas whose farms can never provide full employment and a decent liveli-

Godsend

The farm programs that were a peacetime blessing are a wartime godsend.

—CLAUDE R. WICKARD

hood for more than a fraction of their present population.

In other words, adequate farm reorganization would fulfill a war need and would go far toward permanently removing difficulties in so-called problem areas.

Furthermore, the proposed reduction in the farm population need not cause individual hardships, because this does not entail uprooting operators who cannot use prevailing technology and farm size, nor is it proposed to deprive any farm families of their meager farm income before more remunerative employment is available. Death and retirement will remove approximately 100,000 operators a year from the inadequate units, besides those drawn off by more attractive employment. As they die, retire, or migrate, their tracts should be combined into more adequate farms.

Moreover, the ultimate outcome does not imply regimentation of farm operators into one mold, because adequate farms range in output from \$1,500 to \$10,000, providing abundant flexibility for differences in ambition, ability, type of farming, and size of families. Except for credit and technical assistance, most of the adjustments are

within the power of the community to achieve.

Finally, the immediate adjustment is realistic in providing for more new marginal farms in the South because of its greater proportion of inadequate farms. Technological changes occur slowly and such an increased production requires not only larger farms but more power machinery, new skills and a host of other adjustments.

Some differences in average production per farm due to type of farming, topography, or productivity will remain. We do not believe, however, that any regional differences exist in the potential ability of farm people, but that much of the prevailing differences are due to unequal opportunities. Accordingly, the long-time proposal provides for adequate farms in all parts of the country, or a minimum production of \$1,500 at 1939 prices.

Further, the realization of the objectives would go far toward meeting the basic problem in agriculture—wasted manpower. At fair prices the average output on adequate farms is sufficient to provide an American standard of living for a farm family. But price programs alone will not return a decent living to families on the inadequate units, because their chief difficulty is too low a volume of production. This problem can be met only by reconstituting these units and giving their present operators a real chance, in or out of agriculture, to exercise their full productive powers in return for a decent livelihood.

Third, the ultimate outcome would be a national farm plant organized into efficient and predominantly family-operated farms, employing throughout the year about

one-tenth of the total labor force and adequate for our food and fiber requirements because our present farm acreage is capable of a much greater output through improved technology. If, in the future, society should need an even greater farm output, improved technology can probably make this possible through the enlargement of the proposed 2,000,000 efficient farms from the total available raw land suitable for cultivation, representing an additional 20 acres for each farm.

Eliminate Waste!

It is most certainly recognized that better farm technology and a smaller farm population are feasible only insofar as we construct a total economy capable of offering continued employment opportunities for all. And it is further recognized that in the past decades our economy has fallen far short of this.

There is no solution for farm poverty except through reconstruction of our economy along efficient lines. Our suggestions for eliminating the prevailing waste of human talent in agriculture is predicated upon the assumption that at long last it is the Nation's firm will to rid itself of the indecision and incompetence of outmoded institutions, and to devise ways and means of achieving a standard of living for all commensurate with the full and continued use of our productive powers. We do not believe that the existence of mass poverty amidst idle productive capacity will be tolerated forever.

Even so, objections may still be offered to taking advantage of the present opportunity for organizing an efficient farm plant because that would deprive many families of a refuge after the war.

In this regard, is not a fatalistic acceptance of the inevitability of depressions a basic reason for their occurrence and a hindrance to our full war effort?

*To her fair works did Nature
link
The human soul that through
me ran;
And much it grieved my heart
to think
What Man has made of Man.
—WILLIAM WORDSWORTH.*

State Legislation

FOR WAR AND FARMING

By ARTHUR B. JEBENS. *This is the third in a series of reviews of what State legislatures are doing, prepared by an assistant legislative planning analyst in the Bureau of Agricultural Economics.*



REAL PROPERTY taxation problems have been a major source of legislative debate this year.

In Mississippi a recess tax commission investigated assessment procedures and analyzed the relation of assessed values to market values for real property. Its report recommended the adoption of annual assessments, appointment of deputy assessors from a list of candidates found to be qualified by the State tax commission, expansion of the functions of the State commission, elimination of self-assessment, revision of real-property classification, and improvement in equalization procedures.

A number of these proposals and other related bills were introduced, but the general shift of emphasis to the more immediate war problems left most of them stranded in committees. The items enacted were those reducing from 15 to 6 years the time in which tax assessments might be adjusted, providing additional aid to assessors in oil-producing counties, and limiting the fees for back-tax collection to \$5,000 a year.

Assessment review has been a major tax problem in New York. The bills vary in their approach from independent county boards of assessment review, either mandatory or permissive, to a provision for a bureau of local assessment review in the State tax department with jurisdiction over franchise taxes, local assessment, review, and equalization. An interesting compromise bill was introduced. It would create boards of assessment review for areas coterminous with the nine State judicial districts. The creation of the board for the New York City area would be mandatory, but in the other areas would hinge on a favorable vote of a majority of the boards of supervisors in the counties or a petition signed by the property owners representing 2 percent of the assessed valuation in the county.

Other New York tax bills would eliminate the State real property tax levy and would require local assessors to adhere to the State manual of assessment or be subject to removal by the president of the State tax commission.

In South Carolina proposals to require true assessment of real and

personal property were defeated. The creation of committees to study the personal-property tax problem has been proposed in Pennsylvania and New Jersey, and a bill has been introduced to eliminate entirely the New Jersey personal-property tax over a 5-year period.

Public Finance

Considerable attention also has been given to public finance. Faced with the novel problem of mounting surpluses in the State treasury, the Mississippi Legislature turned down a proposal to buy war bonds, but reduced the State real-property tax levy from 6 to 4 mills and empowered the Governor, treasurer, auditor, and chairman of the tax commission to make further reductions. A cut was also made in the income-tax rate, and proposed increases in severance taxes, particularly on petroleum products, were defeated.

The New Jersey Senate was given a bill to create a State resources reserve fund that would receive \$4,000,000 each year from the motor-fuel tax and \$1,000,000 from the alcoholic-beverage tax until the fund totaled \$50,000,000. This money would be invested in Government securities and used as a cushion for emergency relief after the war. Other New Jersey bills would create committees to study the budget and fiscal procedures and to investigate political subdivisions receiving public funds.

Rhode Island is making extensive changes in its financial structure. A house bill would increase the State's share of the relief cost and impose a 5 percent corporation income tax, double the telephone tax, establish a gift tax, and increase

horse racing and liquor taxes. Two amendments to the constitution have been proposed; one would prohibit the diversion of automobile taxes and the other would provide for special funds.

Immediately following the 1942 regular legislative session in Kentucky, the lawmakers reconvened to consider the problem of redistricting the State assembly and senate. Sixteen bills were introduced incorporating various plans; one was approved in the senate. A large increase in urban and mining population and a stable rural population has created the need for action.

Reapportionment

Legislation has been enacted on this subject in Virginia and to some degree reflects the increase in urban population. Rhode Island has considered reapportionment, and bills were drafted to provide for a referendum on a unicameral legislature, for biennial rather than annual sessions, and for an amendment to the constitution to reduce senate membership from 44 to 24.

A proposal to change from annual sessions to biennial was defeated in South Carolina.

A new approach to the problem of reapportionment was offered the New York Legislature. One bill would require the Governor, whenever the legislature failed to make readjustments voluntarily, to appoint a committee of nine to recommend alterations of senate districts and apportionment of assemblymen among the counties. If a plan has approval of six members of the commission and the Governor, it would become law. Otherwise, any plan receiving the favorable vote of three

members of the commission would be submitted to the voters, and the plan receiving the largest majority would become effective. If no action were taken by the commission, voters could institute court action to determine whether a certain area was entitled to additional representation.

Zoning and Planning

A county zoning and planning enabling act patterned after legislation in other States has become law in South Carolina. Included in its provisions is a grant of authority to adopt land use regulations and subdivision controls. Boards of adjustment are to be created to hear disputes on the enforcement of regulations and to permit variances from the terms of the regulations in special cases. An appeal to the circuit court also is provided for. A section covering nonconforming uses and their termination by the board of commissioners was included.

Zoning legislation was defeated in Kentucky and an extensive subdivision control bill was defeated in Michigan. An airport-approach zoning bill was adopted in the Rhode Island lower house.

Annexation of land to urban areas has been a much debated problem in Virginia, but bills seeking to restrict the application of present laws were defeated. Both branches have adopted a resolution requesting the legislative advisory council to study the problem and report in 1944.

The New Jersey, Rhode Island, and New York Legislatures are considering highway zoning and billboard licensing and regulation bills.

The possibility that war conditions will upset agricultural marketing is

reflected in a New York bill that would empower the health commission to order an embargo on milk or transfer milk from one plant or municipality to another for pasteurization, bottling, or sale when the supply is contaminated or curtailed as a result of accident, sabotage, or war. Other New York proposals would require milk dealers to keep a uniform system of cost accounts and would provide financial aid to milk producers suffering hay shortages. A bill increasing milk dealers' licenses to a minimum of \$25 and adding \$20 for each 4,000 pounds of milk handled passed both branches of the legislature.

A house bill in Rhode Island would prohibit the importation of pasteurized milk unless the exporting State grants a reciprocal privilege. This act is directed at Connecticut which now excludes Rhode Island's pasteurized milk. Repeal of State control of retail milk prices has been proposed.

An extensive State marketing and warehouse system act was defeated in Mississippi, but the bill creating the commission of growers and shippers to make recommendations governing the marketing of fruits and vegetables was adopted.

In South Carolina, laws were enacted requiring the addition of vitamin A and minerals to oleomargarine and white flour, and a resolution requesting Congress to repeal the special tax on oleomargarine was approved.

Other Bills

A bill for the creation, functions, and powers of soil-conservation districts was introduced in Rhode Island. Kentucky enacted a measure making appropriations to pay the

expenses of the State soil-conservation committee and of local districts. The State committee will be required to report biennially on the number and acreage of districts in the State, estimates on new districts, statement of funds, and an estimate of expected expenditures.

A lieu land commission was created in Mississippi to direct the sale of lands granted to counties in lieu of the sixteenth section when located outside the county. The tracts may be sold in parcels of 20 to 160 acres. The Governor of Michigan signed a bill authorizing State agencies or local units of government to condemn tax-reverted lands owned by the State.

Mississippi appropriated money for a geological survey including surface and ground waters in the State. The powers of the New Jersey water policy commission were extended to the study, approval, and supervision of interconnections of public water supplies by a recently enacted law. Another New Jersey bill would grant the commission oversight of surface, subsurface, and percolating waters and permit the diversion of waters to other States in emergencies.

Rhode Island legislators studied a suggestion to enter compacts with other States for protection of water resources. The transfer of the investigation of water resources to the Public Works Department was proposed in New York.

Legislative barriers on interstate trucking were studied in Kentucky, Mississippi, and New Jersey. The major change actually adopted was a Kentucky bill raising the truck weight limit from 18,000 to 28,000 pounds on certain national emergency highways. Kentucky made additional contributions to interstate cooperation by ratifying the interstate compact to conserve gas and oil and establishing the Kentucky-Indiana boundary. State boundary legislation was also considered in Rhode Island, New York, and Virginia.

Other interesting legislation enacted includes Kentucky measures permitting convicts to be paroled for farm labor and army service and providing a method of county consolidation. Limestone crushing plants will be established to supply needs of farmers in Mississippi.

*Spring, with that nameless pathos in
the air*

*Which dwells with all things fair,
Spring, with her golden suns and
silver rain,
Is with us once again. . . .*

*Ah! who would couple thoughts of
war and crime*

*With such a blessed time!
Who in the west wind's aromatic
breath
Could hear the call of Death!*

*Yet not more surely shall the Spring
awake*

*The voice of wood and brake,
Than she shall rouse, for all her
tranquil charms,
A million men to arms. . . .*

*And calling, with the voice of all her
rills,*

*Upon the ancient hills
To fall and crush the tyrants and
the slaves*

Who turn her meads to graves.

—HENRY TIMROD.

Wanted: Social Understanding

by LOWRY NELSON

SUCCESSFUL social planning rests primarily upon the degree of accuracy in prediction of social trends. Accurate prediction, in turn, rests upon a clear understanding of the nature of human culture and the development of reliable techniques for measuring and observing social behavior. In both, considerable has been accomplished, but a large amount of scientific work remains to be done before social prediction—and, therefore, social planning—can rest on a more substantial base than that of commonsense judgment.

What do we know about the nature of culture? Most of our knowledge about it derives from observation and description of the "primitive" or "simpler" peoples. Social anthropologists, using the interview and "participant observer" technique, have produced a vast literature covering most of the primitive groups on the planet. From these descriptive studies, the universal components of culture have been deduced—stated variously by different writers, but representing broad agreement in the classification of items.

The concept of the culture trait as the basic unit of culture is useful. Specific culture traits arise in any given group as products of human invention. One group "borrows" from another, either consciously or unconsciously, although there is abundant evidence of parallel invention of specific traits in isolated groups. The precise conditions in the human organism and in the environment which produce a given

trait or complex of traits, however, are not yet a part of our knowledge.

In short, we are not able to predict inventions. If we are to plan for the future, it is necessary to take account of the inventions that may be approximately anticipated. We may even collectively "requisition" inventions to meet special needs, as was done in the case of the Liberty motor in World War I. The possibility of new inventions in our society is almost infinite, and constitutes a variable which can upset the best laid plans. The control of the variable through some social mechanism by which the introduction and use of new systems and devices can be regulated may be the only alternative to "control" through prediction.

ANOTHER apparently well-established characteristic of culture relates to its qualities of persistence or continuity. Considering human culture as a unit, and it is increasingly necessary to so consider it, it is conspicuously stable. There are no sharp breaks in it. The periodic dire predictions of "the end of civilization" seem to be inspired by the Christian eschatology which envisions a final end of our mundane existence. Wars, industrial changes, and other crises admittedly produce disruption of usual ways of living, and bring great changes in various aspects of culture, but the main stream is continuous.

It is of supreme importance that contemporary planners recognize this fact. In recent years numerous

predictions have been made that another world war would end civilization. If these were accepted at face value, there would be no point in planning for the post-war world. But the planner with the concept of culture as a continuous stream will recognize the war as only another tragic episode. An episode, indeed, which will bring its own modification in the flow of that stream, but which is not going to dry it up. Social planning today, therefore, must consider not only the war period itself, but must be projected to the post-war period as well.

MOREOVER, this principle of the unity of culture in time, as never before, now must be related to the unity of culture in space. The war itself has underlined the planetary unity of human society. While the students of society have long recognized the common cultural elements of diverse human groups, their descriptions have more often made their appeal to the layman, because of the novel and exotic features portrayed. The layman notes the forms of behavior in groups that differ from his own. And, as Sumner has pointed out, the folkways and mores of the "Others-Group" are always considered inferior to those of the "In-Group." This magnification of differences, as opposed to the likenesses, is a tendency which marks a distinct impediment to social planning on a world scale. Yet logic compels us to recognize the necessity of planning on a world scale if wars are to be prevented in the future.

WITH SOME such conception of culture, the social planner today faces the necessity of developing

much more adequate means of measurement and prediction. He cannot be content with mere description of past trends, and their extrapolation to the future. There are too many variables to be considered to render this method accurate. The behavior of prices on the Stock Exchange can be charted for any past period for which records are available, but mere extension of the line to the future is meaningless. The prediction of the future population, similarly, cannot be made by extrapolation. We need to know birth rates, death rates, and what factors influence them, and how influential these factors may be.

The crying need of the social scientist for more accurate devices for measurement and observation is reflected in the phenomenal rise of the use of statistical techniques, in the past 20 years especially, and in the development of such special "disciplines" as econometrics, psychometrics, and sociometrics. The development of "standardized" scales for measuring attitudes, plane of living, social status, and the like represent further examples of scientists searching for more precise instruments of measurement. There have also been attempts at "experimental" social research. Also should be mentioned the studies which actually attempt to predict social behavior. Prediction in parole and in marital success are cases in point.

Social planners in a democracy need to be able to offer alternatives from which constituted authorities may choose. Intelligent choice is based upon consequences to be expected from application of alternative plans. Consequences can be anticipated only if we have some

certainty born of scientific experience. Then only can the planners say, "if you choose program A, result B will be realized; but if you choose program C you will get result D." Then the choice of alternatives rests upon judgment of relative superiority of B and D, as social goals.

THESE more or less axiomatic remarks are intended simply to suggest the following: Wise social planning must rest upon a broad historical and spatial concept of cul-

tural unity; this concept must become widely diffused among the peoples of the world, but first of all, among the planners themselves. Research in the social sciences must be pressed with renewed vigor, particularly in the development of techniques and skill in observing human behavior. It would be short-sighted, indeed if we were to discourage social research in the present emergency when the obvious trouble with the world is lack of social understanding.

Irrigation and Food Production

by PETER L. SLAGSVOLD

PRODUCTION on irrigated lands in the 17 Western States will make an important contribution to all-out war food production efforts. There are more than 20,000,000 acres of land irrigated in those States, about 3.5 percent of all land or 13 percent of all the cropland. An average of 11 percent of land from which crops are harvested is irrigated.

Despite low yields, crops from this land bulk large in comparison with the value of all crops harvested. In Nevada 98 percent and in Arizona 96 percent of the total comes from irrigated land. In Wyoming, Utah, New Mexico, Idaho, Colorado, and California, the proportion is over 50 percent. The investment in irrigation enterprises on these lands was more than \$1,000,000,000 in 1939, and nearly \$600,000,000 more is invested in land now being prepared for irrigation.

The grains and hay raised on irrigated areas throughout the range are vital to the livestock industry of the West. Thousands of cattle and sheep (our greatest source of badly needed wool) are dependent on this feed to carry them through the winter. These irrigated lands are also important producers of vital war products, among them sugar beets, truck crops, citrus fruits, other fruits and berries, rice, cotton, and the various feed crops for dairy production and for beef and lamb fattening.

For some of these products, the supply from the Western irrigated land makes up a very material proportion of the total production in the country as a whole. For example, 90 percent of the sugar beets, 45 percent of all truck crops, nearly 45 percent of the rice, and about 25 percent of the tomatoes come from irrigated lands. About two-thirds of all the

citrus fruit is produced in the Pacific Coast States, Arizona, and Texas.

SUBSTANTIAL amounts of dairy products and fat beef and lambs are turned out on irrigated lands: Colorado alone provides about 20 percent of all the lambs fattened in the United States. Adding the other Western States would bring the proportion to over one-half. About 800,000 cattle were on feed on irrigated land in 13 of the Western States during 1938-42, or about 12 percent of the total fat beef supply.

But a still greater quantity of all farm products is needed and should be possible. Currently low outputs may result from several factors. The soil may be poor or waterlogged; the water supply may be inadequate to furnish a full season's supply; the land may not have been leveled and improved to a point where optimum results are possible; farmers may be unable to finance a change in practices, or the production possibilities for certain crops may not be known.

Average acre yields obtained on Federal Reclamation projects in 1937-1940 were:

Barley.....	bushels..	38.5
Corn.....	do.....	31.4
Oats.....	do.....	38.7
Rye.....	do.....	14.9
Wheat.....	do.....	27.9
Beans.....	do.....	23.4
Potatoes (white).....	do.....	221.8
Sugar beets.....	tons.....	13.5
Alfalfa hay.....	do.....	2.8
Cotton.....	bales.....	1.2

Figures for some individual projects show better results than these averages while yields on others are much lower. On the basis of yields of wheat and alfalfa on nine projects in Montana, yields can be improved very materially on most irrigated

Founders

When tillage begins other arts follow. The farmers, therefore, are the founders of human civilization.

—DANIEL WEBSTER

farms. While some variation in soil exists, there was by no means enough to account for the yield variations.

RESULTS on other irrigation projects are similarly low. In many areas, semiextensive farming is carried on, even to the point of summer fallowing part of the land each year. Relatively little fertilizer is used, except some superphosphate for sugar beets. Even this practice, however, has not been followed universally and on some projects not until recent years.

One way to determine production possibilities is to compare actual farm yields with results obtained at agricultural experiment stations. It is recognized that average farm yields are not likely to be so high as those obtained on small experimental plots, where costs need not be calculated as closely and where better practices can be followed. However, farm yields should not be too far below.

COMPARE the 1926-39 acre yields at the Huntley Experiment Station in Montana with those on the Huntley and the Lower Yellowstone reclamation projects:

Crop	Huntley Experiment Station (1926 through 1939)	Huntley Project (1937 through 1940)	Lower Yellowstone Project (1937 through 1940)
Barley.....bushels...	92.9	42.0	24.6
Corn.....do.....	74.5	34.8	25.4
Oats.....do.....	101.3	46.7	29.6
Beans.....do.....	49.8	25.4	11.3
Potatoes.....do.....	426.1	99.3	86.1
Sugar beets.....tons...	20.63	13.7	13.9
Alfalfa.....do.....	6.0	2.7	1.8

It perhaps cannot be expected that the Huntley or the Lower Yellowstone project farms will show the results that the experiment station gets. But since the soils have about the same yielding capacity, these projects should be capable of producing much more than they are at present. Average yields for most of the major crops on the Lower Yellowstone project are far below those on the Huntley project, except in the case of sugar beets. One reason is that on sugar-beet land in the Lower Yellowstone is placed the small available amount of manure.

It is probably too much to expect Montana irrigated farms to reach the yields of the Huntley experiment station farm. But if all Montana irrigated land could get the yields of the dirt farmers on the Huntley project their increase in production would average 30 percent. Much of the increase would be in badly needed sugar beets, beans, and potatoes.

A similar situation exists in other Western States. In New Mexico, two Federal reclamation projects, the Rio Grande and the Carlsbad, obtain

yields above the average for all reclamation projects. Even so the 3- to 4-ton alfalfa yields on those projects are not up to the 6 to 7 tons per acre of the New Mexico Experiment Station. In South Dakota, yields of crops under maximum production experiments carried on in the Belle Fourche irrigated area are in most cases double the average results on farms in the same area.

COMPARATIVE data for other States point to the same conclusion, that experiment station results are far above average farm yields. Of course, it would be unreasonable to expect farm yields to equal those of the stations, but the great differences indicate that considerable improvement is possible.

Just what can be done to increase the total crop output, can only be determined by undertaking a project-by-project analysis. But war needs warrant taking an inventory of production possibilities on irrigated land. Such an inventory might determine the status of the production plant as to the water supply, irrigation system, land development, and state of productivity, and would show what is involved in get-

ting the production plant into its best possible shape from the standpoint of work, equipment, supplies, and funds involved. Also, a production "potential" survey of each irrigated area might be made to determine the possibilities of increasing output of general crops and of introducing special crops. Using experimental data, a basis for production goals then could be determined.

Such an undertaking sounds formidable, but the effort may be well worthwhile. If farm yields were 60 percent as high as those of the experiment stations, the production increases would add substantially to our production.

This table shows the potential increase in production on irrigated land in 16 Western States if the best-known practices are adopted:

Corn	bushels ..	10, 262, 000
Oats	do	12, 926, 000
Barley	do	25, 216, 000
Flax	do	1, 212, 000
Beans	do	7, 735, 000
Seed peas	do	1, 062, 000
Potatoes	do	34, 750, 000
Rice	do	4, 433, 000
Sugar beets	tons ..	1, 621, 000
Alfalfa hay	do	4, 791, 000
Cotton	bales ..	364, 000

(Texas omitted. The increase in potatoes and sugar beets based on 40 percent of experimental yields. The other items are based on 62 percent.)

Shifts to other crops might be made on many of the projects if deemed advisable. Unless a full supply of commercial fertilizer is available, however, crop rotations will have to be followed.

A QUESTION may be raised concerning the cost of obtaining these increases on irrigated land compared to nonirrigated land in some other

area. In any case it should be remembered that these irrigated lands represent the only opportunity of increasing the intensity of production in arid and sub-humid areas of the West. From current knowledge regarding irrigated areas in the West, however, it would seem that much of the potential production increase is possible without any substantial additional costs. For example, a farm water-spreading system can be installed at a relatively low cost, probably not over \$100, and will result not only in better yields but also in a substantial saving in labor. Proper crop rotations can be introduced without adding much to the farm operating costs.

Many farm products can be grown only on these irrigated lands of the West. Moreover, while feed crops can be grown to advantage elsewhere, a good balance of feed and livestock production in the West will release transportation facilities for other war essentials shipped to or from the west coast.

A number of farmers operating irrigated land in Nebraska have increased their crop yields very substantially by adopting the best practices developed by experiments. Their average yield of alfalfa, for example, is about 4.5 tons per acre, as against a State average of 2.6 tons. All these farmers stress the importance of proper water application, good rotations, and the use of commercial and barnyard fertilizer. It is safe to estimate that intensive educational work with individual farmers on all irrigation projects in the West could increase average crop yields by at least 50 percent, and that yields on many individual farms could be increased even more.

Wartime Wage Rates

by ERNEST J. HOLCOMB

FARM WAGE rates are rising rapidly in response to increased business and farm activity and the farmer's ability to pay. The rates have not yet shifted materially from their normal relationship to factors bearing on them; there is good reason to expect that by 1943 they may go relatively high. But even if there are instances in 1942 in which the pay may slow up increases in a farmer's income, it would be unfair to say arbitrarily that wages are "too high," because wage rates and wage incomes to farm workers have been fluctuating at a level distinctly different from farm prices and farm income, or even from urban wage rates and incomes.

The question of determining whether wages are too high in relation to cash income from marketing is complex, and often is more acute in areas surrounding new industrial plants where additional competition for labor tends artificially to increase farm wage rates. The net effect is that the employing farmer tends to receive a smaller proportional share of the total farm income.

In most such instances the farmer will be able to stand this, since his part of the farm's income will be increasing, even though his proportional share might be declining slightly. By 1943 this latter condition may actually be the general situation, whereas, in areas surrounding new industries, the effect may easily become so tight that the farmer's net return in dollars may decline because of wage rate pressure, and it may be

advisable for farmers to consider a shift in their type of agriculture to more intensive operations, perhaps based on commodities marketable locally.

This can be done by shifting to the production of commodities yielding greater returns per unit of labor employed. In some places this might mean shifting to milk, vegetables, and fruits, while in other areas it might be accomplished by shifting from cotton to peanuts or soybeans.

THE FACTORS pointing toward difficulties in 1943 are the combination of further intensification of agricultural and nonagricultural activities and increased personnel in the armed forces so that a tight labor situation will exist generally.

Added to this will be transportation difficulties that will tend to make for imperfect utilization of the labor force by retarding its mobility and the possibility that farmers may not be able to offset labor shortages by mechanizing operations, because new machinery will be difficult to get. Yields in many areas may decline because of fertilizer shortages. This will have the effect of increasing wages in relation to income.

IT WOULD BE highly arbitrary to say that wage rates are high or low, or to say that a particular rate of pay should prevail in any agricultural pursuit. It would be more difficult to appraise the wage-rate condition for particular geographic divisions, States, types-of-farming

areas within States, or for individual cases affecting employer-employee relationships.

Some of the variables to be considered can be measured statistically, but there are other variables affecting an individual's wages that make the problem complex. These complicating factors include individual aptitudes and abilities, housing and sanitation, schools, churches, and even personalities of individuals concerned.

It may be assumed (with qualification) that wages should not fall below living costs, but should not exceed farmers' ability to pay. Actually this does seem to occur. Some reasons may be invisible subsidies not reflected in the data, savings during one period in time used to carry a situation during another period, borrowings against future income, and delayed reactions of farmers or laborers to such questions as ability to pay and living costs.

In general, the index of wage rates follow closely behind the indices of cash income from marketing and prices paid for commodities used for living. Cash income from marketing lags behind the index of industrial production. Factory pay rolls per employed person and urban costs of living respond almost instantly to changes in industrial production. Slight changes in industrial production seem to cause much greater changes in cash income from marketing and farm-wage rates. Changes in industrial production seem to reflect changes in factory employment of a comparable magnitude, but changes in agricultural production react slightly to these factors, and, also, agricultural employment appears to be affected not at all.

THESE RESPONSES are entirely logical. Changes in industrial activity are less affected by changes in the agricultural situation than are agricultural changes by industrial changes. Yet agricultural production can respond very little to urban demands for farm produce. Thus, radical changes in prices occur that affect agriculture's earnings and the ability of agriculture to compete with industry for the labor force, or at least to pay wages for labor somewhat comparable with the worker's changing costs of living.

In the main, industrial labor has shared in technological improvements within industry through increased wages. In agriculture, however, this does not appear to be true. Agriculture has kept apace with industry in its productive capacity per employed person, but wage rates per employed person in industry have increased while the opposite has been true for agricultural wage rates. It might be said, however, that in industry the rate of increase in production per employed person has occurred more rapidly than have wage rates for industrial workers.

Undoubtedly, a share of the increase in industrial productivity per worker has passed to consumers in the form of lower living costs and to capital and management. In agriculture, it would appear that nearly all the increase in productivity has accrued to consumers, capital, management, and land values. It should be noted that farmers and farm laborers appear not to have shared in the lower living costs as consumers, although the two indices of living costs may not be absolutely comparable.

In other words, farm income and wages have fallen in relation to farm

Unity

Post-war unity of the democracies will be as important then as our war unity is now.

—R. M. EVANS

living costs, whereas factory wages have improved in relation to urban living costs.

The tendency as regards farm-worker efficiencies would be expected to be reflected in a comparison of farm income with farm wages paid. Just to what extent it is reflected in returns to capital and management would be shown in comparing net farm income plus wages paid with wages paid. In this respect it seems that increasing amounts of the increased efficiency in production has accrued to capital and management.

IN THE PAST 30 years, changes in farm-wage rates have followed closely behind changes in cash income from marketing. Cash wages must come out of the cash earnings from the farm, because any tendency for wages to rise in advance of cash income from marketing or tend to rise more rapidly must be followed by effective compensating adjustments or the farmer must resolve himself to a smaller proportion of the total farm returns. This, of course, does not mean that the farmer may be losing money, since, in dollar returns, natural fluctuations are in operation at different levels.

As the two curves rise, the farmer must accumulate savings to meet relatively higher wages during periods of falling prices or accept a smaller proportion of the total returns because wages also lag behind cash income from marketing under these conditions. Apparently cash income from marketing and wage rates have maintained a fairly balanced relationship to each other. Since agricultural production has increased and employment has decreased, total expenditures for labor have declined in relation to production. Prices received by farmers have also declined, but the price decline has not produced as great a decline in income as has the wage rate decline in farm wages paid.

In relation to costs of living (prices paid by farmers for commodities used for living), farm wage rates have been maintained at a fairly constant relationship. During most of the period for which data are available, wage rates have been below the living cost level, but in terms of natural numbers the two curves are fluctuating at different levels. The data show, however, that no significant change in levels of living have been afforded wage workers or farmers, if prices paid for living is a fair index of costs of living for both.

In the case of urban workers, a definite improvement in wage rates in relation to living costs has occurred over a long series of years. Moreover, a greater disparity has occurred between farm wage rates and factory payrolls per employed worker. The urban worker's wage rate has improved materially while the farm worker's wage has declined.

SINCE 1938 industrial production per worker has improved radically,

and urban wage rates are following. Likewise agricultural production per worker has been improving, and the farmer's cash income from marketing is moving upward rapidly, with wage rates following closely with a normal lag. At present, then, the data indicate that wages are in a normal relationship with other factors.

During 1942 it would not be expected that the general wage rate level for farm workers will be out of line with other factors. It is possible that this may occur in certain areas, especially those adjacent to new defense plants and new cantonment areas. In these areas farmers may become hard pressed, particularly those who may be heavily in debt. It is possible that farmers generally may become hard pressed in 1943 unless the fertilizer and machinery problem is eased by that time.

Increases in the armed forces, industrial production, and employment, coupled with a prospective decline in yields and mechanization, may react to the farmers' disadvantage. The effect would be for cash incomes from marketing to level off because of a decline in yields and for farm wage rates to continue to increase. Farmers will not be afforded opportunities to increase the efficiency of the labor force through mechanization to offset these conditions.

WAGE RATE RISES should not be viewed with alarm at present, except in areas surrounding new industrial centers. In general, the farmer's income is rising more rapidly than wage rates and more rapidly than prices of commodities farmers buy. In time, wages will rise more rapidly than the farmers' incomes, but farm wages have been relatively lower than farmers' incomes and farm in-

comes have been relatively lower than prices of commodities they buy. So the rapid rises are natural responses in this recovery period.

As the situation becomes more tense, areas surrounding new defense sites are going to adjust their types of agriculture. The Department should guide these adjustments carefully. In areas in the South and Midwest the adjustment should be more permanent in character while in other areas the adjustment process may have to be revised after the war is over.

The permanent adjustments may stand large capital outlays, and their pattern should be governed by the type of adjustments that have taken place around long-existing industrial centers.

In the other areas the adjustment should be taken care of through effecting a proper distribution of future production goals. In areas where permanent adjustments are possible, a part of the capital readjustment should include better housing facilities, and employer-employee understandings should include elements of security of the job. These will tend to offset laborers' requests for higher wages. In all areas perquisites and security of employment will aid in forestalling exorbitant wage demand.

EFFECTIVE UTILIZATION of the labor force promotes greater continuity of employment which in itself solves the ultimate desire of the laborer for greater earnings. If perfect timing of the various farm tasks could be achieved, the need for laborers would be reduced tremendously. While this perfection cannot be had, improvements can be

made. In so doing, the demand for man power is reduced and farmers can better afford to pay higher wages.

Southern farmers in the past have sought to maintain a surplus labor force on their farms. When labor was plentiful and wages were low it may have been advantageous to do this, but as labor becomes scarce

these attempts at maintaining surpluses of labor tends to encourage higher wages.

It should be the aim of all farmers to maintain a balanced agriculture, but "balance" should mean more than mere crop rotation in the usual meaning of the expression; it should also mean a balance for labor utilization.



Books

THE PRIME OF LIFE. *Gove Hambidge*. New York. Doubleday, Doran & Co. 243 pages.

by ROBERT C. COOK

WASHINGTON has become many new things since the New Deal took over in 1933. Most important, it has become the capital of the world. It will never again be the simple village which for a time in 1918 and 1919 took a leading place in world affairs, and then tried to turn back to village again—not altogether successfully.

Washington, a city of paradoxes, pressures, and prejudices, is a bundle of not too happy integrations of the conflicting forces—economic, political, spiritual, and in a dozen other dimensions—which are the United States. In times of crisis, these usually diverse and conflicting forces may all too briefly be united in a solid, even quiet-flowing stream of affirmation, but at other times these do not long hold in check the cross-currents and the back-currents which, too much of the time, make Washington about as unified and co-

ordinated as the first 100 yards at the foot of Niagara Falls.

In the midst of this turmoil, Washington is a veritable honeycomb of microcosms. To survive in the midst of turmoil, man can live only by building a cozy corner away from the greater and more complicated whole. In a charming and intimate book, Gove Hambidge gives a picture of such a microcosm, though by no means a garden-variety sample. This diary of one day blueprints definitely a grade A cosm inhabited by almost legendary beings.

In it, even a cabinet officer can be glimpsed in an unguarded moment trotting absorbedly to work in his socks with his shoes slung over his shoulder. And the life purposes of the people with whom this diary deals for a day are not merely tying and untying red tape. They have much important work to do—so much work, in fact, that it is hard to

see how it can ever get done in the years after 50, which are the ones left to our narrator.

I am not going to expand this intimate sketch of a happy and useful and integrated life among the pressures and prejudices. Here no growling politician "or elses" the frightened job holder into doing nameless violences to the taxpayers' money. This charming blow-by-blow account of how one group of idea-boys of the U. S. Department of Agriculture comport themselves of a Saturday afternoon is no anonymous fictionalization with a saving statement at the start that "all resemblance to persons living or dead is purely coincidental."

Here are names in the news. Some of the oldsters in the Department may be disturbed; but most of them have been disturbed more than once these past 10 years and to them this will only be a ripple. Since introversion is not an outstanding characteristic of the New Deal, the newcomers will hardly object.

THE DAY outlined in the diary is a Saturday, where, before sunup of a summer morning, bird songs wake Hambidge early and start him off on several pages of philosophical background while he is still between the sheets. Shave, breakfast, to office through the maze of Washington traffic, then work on the Yearbook of the Department of Agriculture.

This important volume Hambidge has editorially godfathered since 1936. Each volume has been made a valuable summary of some aspects of agricultural science, of much more value than the rather hodge-podgy miscellany of former years. Work stops at 1 on Saturday, and home to lunch. Then to horse-shoe pitching

and badminton, to supper, and an evening of talk about the future of a budding daughter; and so to bed.

In a world that surely will be increasingly preoccupied with government, this picture is one to rejoice and reassure the taxpayer, who would be a surly fellow indeed to begrudge a penny to maintaining so charming and fulfilled and *useful* a life. The research of the Department of Agriculture has been invaluable in contributing to the progress of America. While it has not solved all agricultural problems, it has abundantly paid its way, and without it matters would have been incomparably worse. So here is government at its best and in a form which needs to be sympathetically understood by all the people.

The reviewer feels he is rather churlish in interjecting a querulous note in so idyllic a theme. Certain passages in the chapter on the work of the Department and on the place of science in the modern world are of very definite interest to readers of LAND POLICY REVIEW. The reviewer, who has known Mr. Hambidge's other writings, was surprised and somewhat distressed with what he read here. He is the more so because he does not feel that these views really represent Hambidge's beliefs and that the trouble lies in too urgent a condensation to make the book an evening's reading.

Christopher Morley once said that the problem of the writer is "not to write so he can be understood but to write so he cannot possibly be misunderstood." Very likely some of these comments are simply misunderstandings on the reviewer's part, but they are what he got out of reading the book and rereading the passages in question. Neither does he feel

Duty

It is the duty of governments, and of individuals, to form the truest opinions they can; to form them carefully, and never impose them upon others unless they are quite sure of being right.

—JOHN STUART MILL

that his objections are quibbles, since they have to do with what science is and what its place is in our society.

THERE ARE SEVERAL somewhat interrelated propositions which disturb the reviewer: Science as science has been busy transforming the activities of men; science is a product solely of the cities; science has been a major force in consciously shaping society; and that the preoccupation of science is the fulfillment of human needs.

The reviewer regretfully takes issue with these propositions in whole or in part. He does this with the feeling that the place of science in our 1942 society and the things that science can do to get us out of the current mess are tremendously important. For this reason statements that can be misconstrued because of overcondensation or for any other reason are most unfortunate. The time is definitely past for quaint folklore and wishful thinking. If

science is to help in the resolution of our perplexities it will have to be by clarification, not by confusion.

FARMERS had been at work for generations before the city slicker took the slightest interest in biological science. This is not to deny that the specialization which has culminated in cities is unimportant in the development of science. But Spillman, Hays, Swingle, Kellerman, Reed, and a multitude of other workers who added new plants to American farms and new ideas to American agriculture were country boys.

Some of them made their contribution to science in the leisure of the specialized pattern of an experiment station. But the accounts of the graduates of the first few classes at the Kansas State College at Manhattan make it very clear that there was no steam-heated, hot-and-cold-water emporium of learning.

Yet from these early classes came a galaxy of names that have carried the torch of agricultural research very far. The interest and drive which made the work of these men possible came from a rural environment. The American farm environment may have been meager and poor and there may have been too much work to do. But the reviewer questions whether it was as poor and meager as implied.

PERHAPS the most important project of all was under way at the University of Minnesota where Willit M. Hays and a group of inspired workers were intensively and extensively engaged in hunting for those "plant Shakespeares" which Hays conceived of as being the basis of variety improvement. And Hays was not far wrong, for one need

mention only one "plant Shakespeare" which a few years later founded the Marquis variety of wheat. On this variety the entire Canadian wheat industry is based.

Spillman also at a State experiment station had in press a paper which independently worked out Mendelian concepts of heredity before the rediscovery of Mendel's law was announced from Europe. We know that the breeding of many definite and distinct varieties of plants had been accomplished long before Mendel. So all that can be claimed is that a sharp new tool had been given to an ancient art. The art was already there, and it was an effective art, as long as it followed the scientific technique of taking thought of the nature of things.

To the reviewer, the claim that science is purely a city business with no roots in the country because there was no leisure in the country is misleading.

The beginnings of biological science were unquestionably made on farms. There is the Old Testament story of that surpassing country slicker, Jacob, who applied genetics so successfully to get possession of Laban's flocks. The story of this is often misinterpreted to prove that Jacob used the discredited technique of "maternal impressions" to bring to birth the "spotted and ring-shaped sheep" which were to be his. A reading of the text proves that Jacob put a good 2 days' drive between the flock in which he used ring-shaped rams and those in which he didn't. In other words, he was breeding for a genetic character and using effective means to develop and spread that genetic character as widely as possible.

One of the surpassing examples of animal breeding in the world is the Arab horse. Here an elaborate system of breeding has been developed and has been surpassingly successful. This again was not something that was thought up by city people.

The same kind of thing goes for plant breeding, which is so old that the sharpest tool of the geneticist, the progeny test, is set forth unmistakably in the New Testament: "By their fruits shall ye know them."

In American agriculture plant breeding went back to colonial time and it was not practiced by people who came out from the city. The formation of agricultural experiment stations was begun shortly after the Civil War, because American farmers demanded that the problems of American agriculture be dealt with scientifically. The reviewer believes that an excellent case can be made for a high culture standard among the American farmers and in many regions up to modern times.

SCIENTIFIC plant breeding in American agricultural stations was initiated after the rediscovery of Mendel's law in 1900. By 1890 many State experiment stations had quite extensive plant-breeding projects under way and very important progress was being made. Notable among these was the group at the Kansas Experiment Station where Mendelian segregation in maize was recognized and reported in a scientific publication a number of years before Mendel's law was rediscovered.

At Michigan, Professor Beal and others were trying very successfully to improve maize varieties.

Pocket

I believe that the farmer is entitled to parity in his pocket as well as parity on paper.

—R. M. EVANS

THE CONCEPT of interactions between city and country being a matter of conscious planning seems unfortunate. Culture patterns up to the present time have out-Topsied Topsy in "just growing" without anybody really giving any thought whatever as to how they should grow. It is very misleading even in quite casual popularization to imply much more planning than actually ever was applied. Nobody ever consciously said, "We have got to mechanize American farms so we can have more people in our cities." All that "just grew" quite casually, and quite disastrously, as it is turning out.

One of the troubles with our world today is that entirely too many of our most important words are used with many different meanings. "Science" is one of these words. The meanings in which "science" is used are almost as diverse as are the meanings in which the word "love" is used. The results are almost as unfortunate. Ever since he began to think at all, man has been obsessed with the desire to control his environment. Throughout many long ages he tried to do this, but by means of magic. Quite recently in his geological history, he has discarded the techniques of magic and

has tried to come to grips with the universe and the world and the life about him not by incantations but by learning about the nature of things.

THIS PROCESS of learning about the nature of things is called science. The tools of science are simple: observation, experiment, hypotheses to explain the results of observation and experiment, verification. Science strictly is this business of finding out about things.

And a last word of dissent regarding the "wants" angle. The purpose of applied science or technology is unquestionably to find out about human wants and to find ways and means to satisfy them—even to inspire wants no human being ever had before and sell him a gadget to satisfy this suddenly insatiable need. Science itself has basically no interest in human wants.

The urge to find out about the nature of things is quite distinct from the business of supplying human wants. As a matter of fact, as soon as the wants angle becomes paramount the value and effectiveness of science begins to diminish. The reason for this is clear enough. Nature is at best a contrary-minded jade, who delights to give the investigator Delphic answers to his questions.

To distill the truth from these equivocations is a difficult matter, under the best circumstances of abstractness and objectivity. When this is further complicated by urgent demands to satisfy human wants or needs, a serious constellation of new factors is added to an already complicated equation. To furnish useful tools for the technologist, it is therefore essential that the scientist re-

main somewhat aloof from the factory and the hospital and the market place and the field where his discoveries are put to use for the advantage or disadvantage of mankind.

This is the reason why a great deal of talk about our present state being an "age of science" is the most arrant nonsense. This is an age wherein the fruits of science have been applied stupidly and self seekingly by people skilled enough in their own way, but without any understanding of science or any urgent desire to approach the problems of human welfare from a scientific point of view.

WHAT WE are suffering from is an age of nonscience hindering the arts which science has enriched. Obviously, the way out is not more of the same kind of quaint and dangerous perversion. Neither is it to ask scientists to become some kind of superpriests (a role which some sci-

entists are unfortunately not loth to play).

In an age of science we would seek to learn the facts about human life and about society, and we would accept the mandate of the facts, discovered as objectively as possible, in ordering our lives and in ordering the lives (we *hope*) of those we must perforce live with. It is not necessary to document the fact that the world we live in, while it is plagued almost to death with gadgets which have sprung from science, is wholly nonscientific in its outlook and procedures. The reviewer feels very strongly that this is a true and accurate statement of the actual situation, and it is not a view with which Hambidge would altogether agree. Yet the question of which view is nearest to being the truth is perhaps the most fundamental question which confronts our civilization in this day of trial by battle, in a war of tanks, planes, and *ideas*.

MUSTANGS AND COW HORSES. Edited by J. Frank Dobie, Mody C. Boatright, and Harry H. Ransom. Texas Folk-Lore Society. Austin, Tex., 1940. 429 pages.

by CATHERINE C. CARMODY

BACK in those fine wild free days when the West was still being won, and every man counted for something, the character of the horse had its own special importance, too. Various as are the descriptions in *Mustangs and Cow Horses* of the mustanging era at its height, an appreciation of this fact marks them all.

As the introduction makes plain, this unique collection of Americana published by the Texas Folk-Lore

Society aims chiefly at placing emphasis on horses rather than on the literary achievements of those who write about horses. While therefore some of the pieces are in the realm of good writing, most of them are homely first-hand accounts—culled from old newspapers, pulp-paper magazines, and similar sources—full of the language and flavor of life on the western plains and clearly indicative of the importance of horses in the contemporary culture.

What was the origin of the horse in the Western Hemisphere? According to this volume, it has been definitely established that he was unknown in these parts until the coming of the Spanish conquistadores. Indeed, it has been said that the possession of horses gave the Spaniards a great advantage over the native Indians, who had never seen these animals before.

Most horses, like men, have a strong instinct for freedom, and lose no opportunity to shake off restraints. Many of the horses first brought to the Americas, descendants of the finest Arabian blooded stock, seized the first available opportunity to run away from their owners.

FOR GENERATIONS thereafter, growing numbers of their progeny raced over the plains, spreading gradually northward, claiming the whole West for their kingdom with little interference from man, except for a few Indians and scattered ranchers. Truly this was a land fit for Hounhymns.

The development of the western United States, however, widened the demand for horses and brought the market for them closer to the source of large supplies free for the taking. That was the signal for the end of the splendid life of the wild horse, or "mustang," as he had come to be called, and the rise to eminence of the professional mesteñero or "mustanger," one who made it his business to capture and sell these animals.

Several methods were employed in the chase, most of them basically dependent for the first move on establishment of friendly relations between horse and man. The mesteñero usually went out with the intention of taking "a whole drove,

and nothing less." In the attempt, he sometimes had to spend many days with a band of mustangs, persuading them little by little to trust and accept his presence, and even to follow him. After that, it was a question of maneuvering them, with the aid of hidden confederates, into a camouflaged pen.

Once caught and roped, the horses were driven to market, where \$2.50 a head, and sometimes less even than that, was considered a fair price. "While money was hard to get, time was not much of an item."

MUSTANGING on a large scale developed during the middle part of the nineteenth century, and reached full tide during the 1870's and 1880's, when the appearance of fences ended the great days on the open range.

The mustanger concentrated his life so completely around horses that his feeling for them came to resemble that hesitant yet fascinated interest human beings have for other human beings who differ from them in language and customs. He studied their ways, drew some general conclusions about them, and tried to use these conclusions as a measuring stick by which to judge the individual horse. He lived with and by horses, sang songs and told stories about them, invested his life and his future in them.

Out of all this arose a kind of folklore which recorded and celebrated the position of the horse and his relation to man. Many are the legends recounted by old-timers who were veterans of the mustanging era—stories about huge orange or blue-colored stallions with snowy manes and tails that swept the ground, strong, noble creatures who always eluded capture, or who, if captured,

drowned themselves or otherwise committed suicide rather than lose their freedom. Other stories told of the bravery, sagacity, and affectionate nature of horses.

Perhaps, though, nothing illustrates better the dominant place of the horse in that society than this

sign posted in Red River County, Tex., in 1840:

GEORGE ANTONIO DWIGHT

Keeps Mustangs and People

1¼ Leagues Off Rt. Hand Path, 3 times

SOYBEANS—GOLD FROM THE SOIL. *Edward Jerome Dies.* The Macmillan Company. New York. 122 pages.

by CAROLINE B. SHERMAN

AGRICULTURAL researchers and experimenters have a vigorous press agent in this brisk writer. Federal workers may hold the center of the stage he here creates, peoples, and manages, but State workers, forward-looking growers, and risk-assuming processors play their essential parts.

To be sure, soybeans have had an ancient, oriental, and eventful history, here duly suggested. And for a decade or so their fame has been spreading over many lands, but its expansion, as it interests us, has been accelerated and guided by patient men of our own country.

Suddenly the globe-encircling hostilities have catapulted the impor-

tance of the crop straight into the consciousness of people generally. Laymen in this country now know that we have asked our farmers to produce one-half again as large a crop of soybeans this year as they have ever grown before.

At once many want to know, How come? Can we do it? How will they be used? As soybeans or as substitutes? For civilians or for war? Answers to these and many other questions will be found here, set forth in crisp fashion with accent on the human side of a development that has been full of surprises not unmarked by success. And scientists assure the reviewer that the facts are right.

*Away, away, from men and towns,
To the wild wood and the downs—
To the silent wilderness
Where the soul need not repress
Its music, lest it should not find
An echo in another's mind,
While the touch of Nature's art
Harmonizes heart to heart.*

—SHELLEY.



Letters

SIR:

As a contribution to the thought on the vital subject of post-war programs, I send you excerpts from an editorial by J. F. Kaylor in the *Journal of Forestry*, Volume 39, No. 7.

—HENRY CLEPPER,
Managing Editor,
Journal of Forestry,
Washington, D C.

[Enclosure]

UNFINISHED WORK

Pertinent facts regarding tax-delinquent lands are brought out in the recently issued publication *State Legislation for Better Land Use*. These lands have been very aptly termed "the new public domain." Management of these areas as forests has been expressed as "attaching a destiny to the land." But, what are we foresters and forestry organizations doing with this obligation? Only a few States have shown positive action in developing an acceptable policy for reverted lands.

Several States have passed enabling legislation to facilitate action by "striking off" what has been a problem class of land to a management agency. Such enabling legislation generally eliminates compromises by reducing the redemption period. There is need for legislation to simplify deeding tax-reverted lands to the State, rather than to the county or town as is now the practice in 29 States. Because of the insta-

bility of town and county administrations, they are not considered as practical units as State organizations in a Federal cooperative program. The policy on the part of these local units is usually one of trying to retain such land in the tax base or to hold it ready for anticipated returns.

There has been a belief, of long duration, that delinquency was a temporary or extraordinary occurrence, and that some panacea would be developed to absorb the land and once again bring in tax revenues. County officials, and especially local groups benefiting by the unstable position of such lands, have been slow to accept state supervision as the way out. Some of these individuals are now convinced that the problem areas can be administered best under State jurisdiction. . . .

Some 14 States with a large area of tax-delinquent forest or submarginal farm land have passed enabling legislation to meet the requirements of the Fulmer Act. But because no appropriations have been made to make the act operative, other means might well be used to acquire additional acreage for State administration.

Much conservation work has been performed by the Civilian Conservation Corps in the past 8 years on former tax-delinquent lands now administered as State forests or National forests acquired by exchange. Therefore, it appears logical that we need a state land-purchase program to supplement blocking in what is at

hand; namely, an estimated 50,000-000 tax-delinquent acres not under management.

Now is the logical time to block up these lands so they will be available for exchange or development during the next decade. Generally, these lands are in scattered tracts, and as a problem have been handed down from one county administration to another. If county officials could be shown how similar lands have been developed in the past, they will be more likely to assist in securing adequate legal action to bring them into State custody.

There is no question that public administration of these lands is urgently needed as a basis for effectuating more intensive fire protection, reforestation, flood control, wildlife management, and recreation in the areas where they are now major problems. . . .

Small blocks of tax-delinquent forest land might well be acquired and administered as community forests. Larger blocks call for the development of small communities or villages whose residents may be given part-time work in the woods. Some States have found this method very desirable, especially where the men are given employment part of the year as lookouts, fire guards, or woods workers and during the remainder of the year on fish and game activities or recreation work. As a profession we have hardly scratched the surface in providing part-time employment on forestry projects. Several States have made remarkable progress along this line in the past 5 to 8 years, but in most cases only after assistance had been given by the Federal agencies in such improvements in forestry, fish and

game, and recreation as was necessary to make it possible to operate as a conservation unit. Thus the State rather than the county is recognized as the more logical administrative agency, since it is usually in a better position to create conditions more nearly economically sound and socially secure.

Enough areas have been brought under management or improved to demonstrate the feasibility of the program, but many more need to be given similar attention. Now is the time for action, too long delayed, to bring about adequate work units for the manpower which will be seeking employment in the readjustment which must follow the expanded industrial and defense program. This manpower will require supervision and direction by technicians.

With the possible exception of New England, every section of the country has its share of these 50,000-000 acres of cut-over forest lands now tax delinquent. This is high priority work for State and county land-use planning committees, something very definite in which they can make a showing.

SIR:

May I direct your attention to an error on page 15 of the March number? The statement is made that the wineries paid 7 cents a pound for wine grapes in 1939. I believe the figure is closer to 0.7 cents a pound. One hundred forty dollars a ton for wine grapes would be rather profitable in this county.

—O. V. PATTON,

*County Agent, U. S. D. A.,
Stockton, California.*



For Your Attention

AGRICULTURAL STATISTICS, 1941.
Washington, U. S. Department of
Agriculture. 731 pp.

Prepared under the direction of the Yearbook Statistical Committee: Joseph A. Becker, chairman; Paul Froehlich, secretary; Donald Jackson, S. W. Mendum, Fred J. Rossiter, C. V. Whalin, and Rodney Whitaker, "this volume presents information formerly published (until 1935) in the statistical section of the Yearbook of Agriculture. It brings together what seem from experience to be the most important agricultural statistics of the United States and of the world so far as the agriculture of this country is concerned * * *."

Statistics include acreage, yield, and production of crops; numbers and production of livestock, farm utilization, prices paid to farmers, farm sales, and farm value of crops, livestock, and livestock products.

The volume is divided, as in former years, into several large sections as follows: Statistics of Grains; Statistics of Cotton, Sugar, and Tobacco; Statistics of Fruits, Vegetables, Melons, and Tree Nuts; Statistics of Miscellaneous Crops; Statistics of Beef Cattle, Hogs, Sheep, Horses, and Mules; Dairy and Poultry Statistics; Statistics of Foreign Trade in Agricultural Products; Farm Business and Related Statistics; Miscellaneous Agricultural Statistics—Forestry, Weather, Roads, etc.

NATIONAL DEFENSE MIGRATION.
Second interim report of the Select Committee Investigating National Defense Migration, House of Representatives, Seventy-seventh Congress, first session pursuant to H. Res. 113, A resolution to inquire further into the interstate migration of citizens, emphasizing the present and poten-

tial consequences of the migration caused by the National defense program. Recommendations on full utilization of America's industrial capacity and labor supply in the war effort. 77th Cong., 1st sess. House Rpt. 1553. 149 pages. Washington. 1941.

The first 17 pages of this interim report is devoted to review of the National Defense Program and its effects upon employment—out of which have come defense migrations. The Committee believes that improvement in coordination of the armaments program is necessary, both to speed production and to prevent widespread unemployment and migration. To this end certain recommendations are presented dealing with:

I. Production Planning and Procurement; II. Utilization of America's Industrial Capacity; III. Participation of small- and medium-sized companies in the defense effort; IV. Review of existing contracts; V. Transfer of labor to defense work; VI. Alleviation of unemployment and training of the unemployed for defense production.

The Committee would have a single civilian board of the Federal Government charged with full responsibility for procurement and for planning war production and the production of essential civilian needs, with a special technical division skilled in engineering and in production, and regional offices established.

The utilization of industrial capacity would involve (1) a systematic plan of putting to work all idle capacity and converting consumer-goods industries to war production; (2) the utilization of existing convertible facilities before new plants or tools for production of war materials are planned; (3) a more forceful and comprehensive policy of plant expansion with respect to critical raw materials; and (4) immediate action by the centralized board with respect to conversion and plant expansion.

A government cannot have too much of the kind of activity which does not impede, but aids and stimulates, individual exertion and development.

—JOHN STUART MILL.

